

## **AMENDMENTS TO THE CLAIMS**

### **1-16. (Cancelled)**

**17. (Currently Amended)** An organic monolayer membrane which comprises:  
amphiphilic compounds each having a photoisomerization group as a chromophore and  
a nucleic acid base (A), and  
one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of  
forming a base pair with the nucleic acid bases (A) wherein there is interposed between each of  
the nucleic acid bases (B) a free space that allows for photoisomerization of the  
photoisomerization group to occur at least one nucleic acid base that is not capable of forming a  
base pair with the nucleic acid base (A),  
wherein the nucleic acid bases (A) of the amphiphilic compounds form base pairs with  
the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic  
compounds align to form the organic monolayer membrane.

**18. (Previously Presented)** The organic monolayer membrane according to claim 17,  
wherein the photoisomerization group is an azobenzene group.

**19. (Previously Presented)** An organic monolayer membrane product that comprises a  
condensed membrane, obtained by compressing the organic monolayer membrane according to  
claim 17, which is laminated on a solid substrate.

**20. (Currently Amended)** A process for producing the organic monolayer membrane  
according to claim 17 which comprises:  
spreading the amphiphilic compounds each having a photoisomerization group as a

chromophore and a nucleic acid base (A) on an aqueous solution containing the one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of forming a base pair with the nucleic acid bases (A) wherein there is interposed between each of the nucleic acid bases (B) a free space that allows for photoisomerization of the photoisomerization group to occur~~at least one nucleic acid base that is not capable of forming a base pair with the nucleic acid base (A)~~, to form base pairs between the nucleic acid bases (A) of the amphiphilic compounds and the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic compounds align to form the organic monolayer membrane.

**21. (Previously Presented)** The process for producing the organic monolayer membrane according to claim 20, which further comprises compressing the organic monolayer membrane to form a condensed membrane, and laminating the condensed membrane on a solid substrate, to obtain an organic monolayer membrane product.

**22. (Previously Presented)** An organic monolayer membrane product which comprises a condensed membrane, obtained by compressing the organic monolayer membrane according to claim 18, which is laminated on a solid substrate.

**23. (Currently Amended)** A process for producing the organic monolayer membrane according to claim 18, which comprises:

spreading the amphiphilic compounds each having an azobenzene group and a nucleic acid base (A) on an aqueous solution containing the one or more oligonucleotides comprising a plurality of nucleic acid bases (B) capable of forming a base pair with the nucleic acid bases (A) wherein there is interposed between each of the nucleic acid bases (B) a free space that allows for photoisomerization of the photoisomerization group to occur~~at least one nucleic acid base that is not capable of forming a base pair with the nucleic acid base (A)~~, to form base pairs

between the nucleic acid bases (A) of the amphiphilic compounds and the nucleic acid bases (B) of the one or more oligonucleotides, and wherein the amphiphilic compounds align to form the organic monolayer membrane.

**24. (Previously Presented)** The process for producing the organic monolayer membrane according to claim 23, which further comprises compressing the organic monolayer membrane to form a condensed membrane, and laminating the condensed membrane on a solid substrate, to obtain an organic monolayer membrane product.